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MEETING ON COMMUNITY PARTICIPATION IN
WATER SUPPLY AND SANITATION

Amman, Jordan, 30 November - 4 December 1985

(Meeting Reference: EM/MTG.CMP.WSS/3)



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MEETING ON COMMUNITY PARTICIPATION IN
WATER SUPPLY AND SANITATION
Amman, Jordan, 30 November - 4 December 1985

Abstract A WHO Regional Meeting was held in Amman in the period 30 November to 4 December 1985 to discuss community participation in water supply and sanitation. It was attended by 14 participants from 8 countries in addition to participants from UNICEF International Reference Centre, International Development Research Centre and Gesellschaft für Technische Zusammenarbeit (GTZ). Objectives of the meeting were to: review processes for community involvement in selected countries of the Region; identify procedures that have been successful and constraints to progress; examine some national programmes outside the Region; and identify areas and topics where there are gaps in knowledge and experience which provide an opportunity for the conduct of research aimed at complementing existing knowledge concerning community involvement processes. It was revealed that there were different models of community participation representing various situations, ranging from minimal involvement of the communities where the central government had undertaken the full responsibility for sector development, to very active community participation. These variations could be attributed to different influencing factors of a political, institutional, logistic or financial nature, willingness of local communities to participate in development of their own services, and other pertinent factors. Participants endorsed, among other things, the principles of community participation as an important element in improving health through the development of the water supply and sanitation sector. They also identified several potential research topics in community participation in the areas of operation and maintenance, use of facilities, health education and communicable diseases.

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1. INTRODUCTION AND OBJECTIVES

The involvement of people and their communities in the solution of their health problems is fundamental in the strategy for achieving Health For All by the Year 2000 (HFA/2000). For this reason, it was decided to hold this meeting to review progress made in selected countries of the Eastern Mediterranean Region (EMR) in the development of processes for community involvement for the improvement of water supplies, sanitation and associated hygiene practices. This review will identify procedures that have been successful and will expose constraints to progress with the intention of exploring ways of resolving problems and of overcoming obstacles.

This will be assisted by an examination of some of the national programmes outside EMR where substantial programmes of community involvement have been operational for several years. Experience gained, problems encountered and solutions found in these programmes provide the basis for design of new programmes and the improvement of existing ones.

Another objective of the meeting was to identify areas and topics where there are gaps in knowledge and experience. Such gaps provide an opportunity for the conduct of research aimed at complementing existing knowledge concerning community involvement processes. Those topics which appear to be capable of yielding results within a reasonable time frame were to be developed by the meeting into draft protocol outlines.

The outcomes of the meeting were envisaged to include:

- 1) a better understanding of increased health benefits from community involvement in the choice, design, construction, operation, maintenance and finance of the technical interventions in water supply and sanitation;
- 2) increased learning about the importance of sound policies and procedures which permit full involvement of communities in all aspects of project development;
- 3) ability of participants to initiate or revise programmes in their own countries in order to achieve higher levels of success in the light of successful community participation experiences in other countries; and
- 4) development by participants of proposals for the implementation of research projects in areas of community participation where insufficient knowledge and experience exist.

2. PARTICIPATION

The meeting was attended by thirteen participants representing eight Member States. It was also attended by observers from Jordan, the host country, two from the International Reference Centre for Community Water Supply and Sanitation (IRC), Netherlands, one from Gesellschaft Für Technische Zusammenarbeit (GTZ), Federal Republic of Germany, one from UNICEF and one from the International Research Development Centre, Canada. They were supported by two staff members from the WHO Regional Office for the Eastern Mediterranean and one from WHO Headquarters, Geneva. A list of participants, WHO Secretariat and Observers is given in Annex I.

3. PROGRAMME OF THE MEETING

The programme of the Meeting is shown in Annex II.

4. INAUGURAL SESSION

H.E. Dr Zeid Hamza, Minister of Health of Jordan, welcomed the participants and said that community participation, through all the individuals and sectors of the community, makes development and improvement of services intended for the community itself an easy matter. This is especially evident in the provision of potable water supply and proper sanitation in a way that would protect the health of those living in the community.

This meeting, which was to examine ways for more effective community participation within the context of Primary Health Care, which is the approach for Health for All by the Year 2000, is commendable. The interest which WHO is showing in information exchange highlights its active role in dissemination of knowledge, with the least cost for achieving the desired result. Also, exchange of views on useful approaches for community participation will have a great effect on developing a suitable plan so that what was to be discussed in this meeting would be practical and successful and conform to the meaning of community participation.

Jordan has adopted the idea of community participation for raising the health standard. There exists in the Jordanian Parliament a Services Committee where representatives from various areas submit their varied needs which are then discussed with concerned ministers. In the area of water supply and sanitation, the Ministry of Health has adopted, since the early sixties, a village health project to maintain and protect water sources from pollution and to also provide wastewater disposal. This continued under the Ministry of Health until the Ministry of Municipal Affairs and the Environment and Natural Resources Authority took over.

At the start of the project, community participation was nominal. However this participation is now substantial thus indicating its success, the community having fully understood its basic needs for water supply and sanitation.

Dr Hamza further stated that the participation of any community results from knowledge of the objectives of proposed projects and both short- and long-term benefits. This necessitates that the planners develop an integrated programme to include all phases of preparation, implementation, and continuous maintenance and points to the importance of health education and the establishment of a coordinating mechanism which is aware of needs. There are local committees for primary health care in every governorate and district which include representatives from various local sectors in addition to representatives from government agencies to study community problems and suggest suitable solutions.

In view of the utmost importance given to the provision of potable water supply and adequate sanitation, the responsibility for this activity was given to the Water Authority of Jordan.

The Minister added that the Government of Jordan believes in community participation not because it relieves the government of some load, but because it makes citizens feel that they are interacting and contributing to their own welfare.

The Minister wished the participants all success.

A message from Dr Hussein A. Gezairy, Regional Director of the WHO Eastern Mediterranean Region, was read to the meeting by Mr H. El Shamsy, Regional Adviser, Environmental Health, and Secretary of the Meeting.

Dr Gezairy thanked the Government of Jordan for hosting the meeting and welcomed the participants. The involvement of people and their communities in the solution of their health problems is, he said, fundamental to the strategy for achieving HFA/2000. Governments, institutions, members of the health professions, as well as all agencies involved in health and development, will have to take measures to enlighten the public in health matters so as to ensure that people can participate individually and collectively, as part of their right and duty, in the planning, implementation and control of activities for their health and related social development.

Dr Gezairy referred to high infant mortality rates in numerous countries of the Region and the compelling need to accelerate activities of the International Drinking Water Supply and Sanitation Decade (IDWSSD) for health benefits. He said the improvement of sanitary services can often be accomplished by the use of simple and appropriate technologies which communities accept and can easily utilize. Community resources and knowledge can be made available to complement central government inputs and to help optimize the use of national resources.

Dr Gezairy then reviewed the objectives and expected outcome of the Meeting, and concluded by stating that community involvement is considered a critical factor in the health improvement process. He cautioned that it was not easy to involve communities in all phases of sector development, but said that this challenge must be accepted for the fulfilment of Decade objectives and, hence, the objectives of HFA/2000.

5. ELECTION OF OFFICERS

The following officers were elected by the participants:

Chairman	: Dr Suleiman Qubain (Jordan)
Vice-Chairman	: Mr Khedher Alias Putres (Iraq)
Rapporteurs	: Dr Taher Ali Al-Hamdani (Yemen)
	: Eng. Haitham El-Homsi (Syrian Arab Republic)

6. SEMINAR PRESENTATIONS

6.1. WHO's Presentations

6.1.1. Community Participation as an Important Component of the Decade Approach

Mr Hassan El Shamsy presented this topic a summary of which is as follows:

The strategy for HFA/2000 calls for community participation as a social, economic and technical necessity. Governments should promote such participation, support it, effectively propagate relevant information and establish or strengthen necessary mechanisms.

Community participation is the process by which individuals and families assume responsibility for their own health and welfare and those of the community, and develop the capacity to contribute to their own and the community's development.

The WHO Decade approach, which is based on its global strategy for HFA/2000, includes components for the association of the community with all stages of programmes and projects. This includes: identification of needs; setting of priorities; planning; design considerations; construction, operation and maintenance, financial issues, and monitoring of project performance.

The need for community involvement has stemmed from certain constraints which impeded proper development such as: failure of newly constructed systems where the communities were not involved; inability of sector central agencies to cope with overstretched programmes in rural areas; inadequacy of government financing; tendency to assign a high priority to paying urban schemes and a low priority to subsidized rural projects; and lack of appropriate mechanisms for articulation of community needs and for tapping financial resources available in local communities.

The Decade should promote more simple, cheap and safe community water supply and sanitation schemes which people can accept and use. Technology must be appropriate and socially relevant. Identification should be made of functions and responsibilities that can be delegated to the communities. Manpower and training needs at community level should also be identified. Use of multipurpose and seasonal markers should be considered as well as effective support to local communities from higher levels of government.

Community participation can be promoted through: operational research needed for the preparation of participation; information services on diseases and their linkage with water supplies and sanitation; involvement of the community in decisions, costs, and actions; determining appropriate institutional organizations at the village level and delegating authority for organizing and supervising community participation, re-defining as appropriate the roles, resources, and working patterns of official supportive organizations, particularly where governmental services have neither the personnel nor the facilities to cope with participation on a large scale; and the creation of a coordinating mechanism that can effectively function at all levels.

A short discussion ensued on the meaning of appropriate technology. It was explained that appropriate technology is technology that is relevant and acceptable to the community; it may not necessarily be the least costly. For example, if a dug well is suitably located and close to a village, its sanitary condition could be improved and it could be covered and protected, and a handpump installed on it. This would be appropriate technology. If, however, the well is situated, a few hours' walking distance from the village, installation of a handpump may not be suitable, especially if the community is prepared to participate in the cost of a system that would bring water to the village. Also, solar pumps would be too costly for a small village, although operation and maintenance costs are negligible.

6.1.2. The participation of women in water and sanitation projects in the Eastern Mediterranean Region

Dr D.R. Billington presented this paper on behalf of Dr (Mrs) Habiba Wassef. A summary follows:

The endorsement and support of the role of women in water and sanitation have been given on a number of occasions by the United Nations family. Women are seen as active agents in contributing to IDWSSD activities to increase the impact of the Decade programmes.

A review of the status and conditions of women in the EMR was presented. Points covered included: that it is difficult, if not impossible, to make generalizations which accurately describe the status and conditions of women in the Region; that the variations are wide; that strong local traditions exist within communities, especially regarding the separation of the roles between men and women; that women have responsibility for domestic matters and men for public affairs; that there are high illiteracy rates among women in some countries; that women's political rights exist in the law of most countries, however their impact is often negated by cultural values and practices, so that the exercise of these rights therefore varied; that there is also poor representation of women in the labour force while much untapped female leadership exists; that women generally have a poor health profile; and finally that there exist both governmental and non-governmental services for the welfare of women.

A number of suggestions were made to extend women's role in communities, with implications for water and sanitation services. Such displacements in the traditional roles of women in the community were usually acceptable to men. However, it was stressed that where deviation from traditional roles was advocated by community developers the permission of the husbands and men of the community was first obtained. Along with water and sanitation activities, social visiting, shopping and marketing, education, salaried work, seeking health or other services, women's community-based activities were usually accepted displacements.

Some practical suggestions were made to obtain the greater involvement of women, which included the need to get high-level political backing. It was suggested that existing female leaders could be used as entry points in the pursuit of getting more women participating in water and sanitation (W/S) activities. Attention was needed to motivate and attract women to W/S programmes by conceiving these programmes in such a way that they are relevant to local situations and respect

local traditions and customs. Two-way communication between the women of the community and the managers, organizers and planners of W/S projects was thought to be very important. In essence, working with informal women's groups and through natural meetings and congregations of women in the community, women should be encouraged to work together, to discuss, to agree, to organize and to undertake IDWSSD activities.

In the subsequent discussion, it was stated by one participant that women are not accustomed to maintaining water sources outside their homes but they could report breakdowns. They could also be trained in simple skills in repairing handpumps and other simple equipment; they could, for example, be trained to grease handpumps, change washers at well points, etc.

6.1.3. Review of training approaches to enhance community participation

This paper, presented by Dr D.R. Billington, is summarized hereunder.

The purpose of the paper was

- a) to alert administration in the W/S sector to things to look for in educational plans in Community Participation (CP) activities; and
- b) to stretch the concept of education for CP beyond "lectures/classroom".

The paper addressed the training of W/S sector personnel in CP as well as the community. Special mention was made of the importance of continuing education of current W/S sector personnel, for the Decade was half-way through and those who would be asked to promote CP in their day-to-day jobs had already received this basic programme training. A review was made of the process of education planning applied to teaching community participation skills, covering:

- the purposes of training;
- the teachers and logistics;
- the trainees and the tasks they were to learn;
- preparation of instructional objectives;
- evaluation considerations;
- the selection and sequencing of content syllabus;
- training approaches;
- revising training programmes.

A variety of important considerations were written into the paper. The speaker highlighted two, namely that learning should take place in the community whenever possible and that people learn best by doing as compared to being passive. Discussion in plenary also brought out the importance of peer groups' influence in changing attitudes. This was endorsed as a fundamental consideration in community participation education with members of the community educating each other in discussions among peers.

6.1.4. Organizing for community participation - the case of the Philippines

Dr R.C. Ballance presented this paper the summary of which follows:

The Rural Waterworks Development Corporation (RWDC) in the Philippines is responsible for promoting and supporting rural water supply projects throughout the country. Operating procedures which provide for the involvement of communities were developed under the Barongay Water Programme (BWP) - a grant/loan financing arrangement supported by a bilateral agency in the 1970s.

The BWP had the objective of developing the capabilities of local government at provincial and community levels and included training and organization as part of the infrastructure development. This, it was expected, would lead to greater self-reliance in rural communities, while the demonstration water projects would yield reductions in water-related diseases.

In the first phase of the programme, provinces wishing to benefit from the financial assistance had to establish positions for, and recruit, a water resource analyst, a water engineer, a training officer and two waterworks technicians. A waterworks repair workshop had to be established, a budget had to be committed for staff and training and plans had to be developed for a water resources task force. Work could then proceed on a water resources inventory, a provincial water development plan and the tentative selection of project sites for the first year's work.

The next phase required that, in the tentatively selected communities, an assessment be made of the general interest in having improved water supply. If this assessment was positive, local people then participated in a feasibility study to explore the options available in terms of the source and levels of service that could be provided. Preliminary cost estimates could then be made and the decision on the system that could meet perceived needs at an acceptable cost could be reached. At this time, too, consideration could be given to the extent to which community inputs of labour and materials could reduce the cash outlay. Upon reaching an agreement, the project would be scheduled into

the annual workplan and the community could formally apply for registration of its Rural Waterworks Association (RWA). Detailed design could be completed for review by the community as well as by an external engineering committee which would assure the technical soundness of the design.

The next phase, construction, could proceed in accordance with the plans agreed on by the community and the programme managers. At the same time training would be provided to the RWA and its staff in such matters as meter reading, collecting, book-keeping, accounting, operational procedures and routine maintenance.

Upon completion of construction and with the system ready to operate, formal hand-over ceremonies can be arranged. The financial obligation for repayment of the loan would begin and the RWA become fully responsible for all aspects of management, operation, control and use of the system. However, the provincial engineer and the technicians are to remain available for assistance with problems beyond the abilities of the community and the RWA staff. Arrangements would be made (as necessary) for upgrading and refresher training of local staff. Monitoring of the system and its use would be provided periodically and regular meetings arranged between the provisional staff and the community. These meetings provide a forum in which problems with the water system may be investigated and resolved as well as furnishing an entry point for the presentation of information on PHC in general and sanitation in particular.

These general procedures as pioneered by the BWP have been followed by the RWDC since it assumed overall responsibility for Rural Water Supply. Some minor procedural changes have taken place. One innovative change is that, where appropriate, meter reading, billing, collecting and accounting services are provided to RWAs by the Electricity Corporation which already has a staff and an infrastructure for similar activities in connection with electricity. Thus the unnecessary cost of duplicating the infrastructure is avoided.

In the discussion following presentation of this paper, it was pointed out that the Philippines experience is only on water. This, however, provided opportunities for further development through the cooperation of many agencies. Water would be an entry point for health personnel to include sanitation. Community participation took place through elected representatives who attended a whole series of community meetings with the agencies concerned. There has been no research or education on use of water points or on their functioning. Regarding availability of the community to cover costs, unit costs per householder were affordable. With regard to operation and maintenance, training provided at local level. There were waterworks repair shops at provincial level. Electric pumps were used and were easy to maintain. Things were made so simple that local people could operate and maintain them. Re-training was also provided. Book-keeping was done at the local level.

6.2. National Presentations

6.2.1. Presentation of Democratic Yemen

A paper was submitted by Mr Awad Abdulla Bahrak, but no oral presentation of this paper was made and there was no discussion of it. The paper may be summarized as follows:

The population of Democratic Yemen is currently (1985) 2.168 million, of which 33% live in urban areas, 57% in rural areas and 10% are nomads. The growth rate of 2.6% per annum. The country is administratively divided into six governorates, and further subdivided into provinces and districts.

The Public Water Corporation (PWC) is nationally responsible for water supplies. Local Peoples Councils in governorates finance the construction of some water supply schemes and are responsible for their operation and maintenance. Local committees and cooperatives, formed in many rural areas, establish their own small water supply schemes. The Ministry of Local Government (MOLG) looks after water supply projects in the northern areas of the country and gives technical and material assistance to local committees.

The Government has accorded high priority to the sector and has allocated 7% of the total budget for it in addition to local contributions. Liquid wastes are the responsibility of the Local People's Councils whose activities are coordinated by MOLG.

Many rural water supply projects have been initiated by the local communities (local committees or cooperatives). In the past four years about 148 projects have been established; they are operated and maintained by the communities themselves. In many of these projects the community seeks material or financial help from involved immigrants, local authorities or the central Government. What is needed is the encouragement of this community participation and technical guidance. The communities need government help in the form of technical advice (study and design), management and training.

6.2.2. Presentation of Iraq

Iraq's paper, presented by Mr Khidhir Alias Putres, is summarized hereunder:

The authorities responsible for design, construction, operation and maintenance of water supply and sanitation projects in Iraq are: the Ministry of Local Government, responsible for the whole country except Baghdad; and Amanat Al-Asima, for Baghdad alone.

Water supply and sanitation are among the important subjects comprehensively discussed in the National Assembly through which people can express their needs and put forward suggestions. Communities also submit their requirements through the popular organizations represented on the Environmental Protection Councils and the Primary Health Care Councils at different levels.

The Ministry of Health, which plays an important role in promoting community participation, cooperates with other Ministries and Popular Organizations to increase environmental and health awareness through the use of audiovisual public information aids; health and environmental education (for schools, institutions, colleges, etc. at various levels), direct contact with people and communities in health centres and at job sites etc.

Community participation in water supply is provided by:

- Maintenance of a high level of hygiene and health practices and habits.
- Preservation of water resources quality and preventing pollution caused by the disposal of various types of wastes to the natural resources. Also, increasing the knowledge regarding selection of water resources away from possible pollution sources.
- Encouraging people to work in fields related to water supply and sanitation.
- Teaching people, who do not have access to safe water, appropriate methods of getting their own drinking water by using local facilities and material and supporting them with simple techniques, equipment and materials such as hand-operated pressure filters, the use of sodium hypochlorite in water disinfection etc.

In some cases drinking water is transmitted to communities by tankers.

- Prevention of unnecessary water wastage.
- Advising people of appropriate methods to be applied to get their own separate sewage systems and related regulations.
- Taking care not to dispose of any material harmful to the sewage system.
- Popular work campaigns some of which are for constructing mainly water supply projects.
- Constructing their own private sewage disposal systems.
- Farmers dredging streams and drains in the area of their fields.

In the discussion following presentation of this paper a question was asked on how the community participates in actions for obtaining their own water. It was stated that people who do not have knowledge are taught. They could seek advice from health authorities and from the Directorates of the Ministry of Local Government.

6.2.3. Presentation of Jordan

Mr Mohamed Dajani gave the presentation of Jordan, which may be summarized as follows:

Water in Jordan is limited. In order to optimize sector activities, since 1984 all water and sewage activities have been handled by the Jordan Water Authority (WAJ). The community participation approach was adopted by the Community Development Department and the Rural Sanitation Project of the Ministry of Health.

In both projects, concerned government agencies, in cooperation with international support agencies, carried out, at the preparatory stages, the necessary survey and study. After policy decisions were made, the local community (municipal councils, village councils, mokhtars) were approached by the respective government agency to investigate how local participation could best be achieved with regard to social and cultural conditions and contribution to the project (labour, local material, education to promote objectives). Through this approach local communities were also informed of project objectives and methods of implementation, why they had been chosen to participate, what this participation would consist of during execution and maintenance of the project as well as follow-up after completion. Also their ideas were listened to and they were urged to appoint their own representatives.

The above project was carried out in the late fifties and the sixties in order to improve water conditions and promote rural sanitation through the construction of pit privies.

The Ministry of Health carried out the following activities in the course of implementing the project:

- setting of strategy for implementations;
- training of labour to carry out construction;
- providing a health education programme at rural schools and in rural areas (mostly by films, discussions);
- informing local communities through their elected committees of project objectives; the local committees acted as organizers of community participation (local material, unskilled labour, health promotion of individuals);

- provision of hardware (cement, pipes, fittings, reinforcing steel bars, handpumps) which was distributed to the beneficiaries through local committees who had obtained guarantees that this material would be properly utilized.

The follow-up programme was carried out by both the Ministry of Health and the local committees; in it, community participation was manifested by initiating the idea of rural sanitation, facilitating tasks by providing local labour, material and arranging meeting places for health education and other related activities; maintenance and up-keep.

The project provided protection and maintenance of 200 small water sources and also constructed 13 000 pit privies.

Since the creation of WAJ, community participation has been limited to indirect financial support through water and sewage tariffs.

In the ensuing discussion, a comment was made that it was interesting to observe that the form and shape of community participations is consistent with the politics of the system. The speaker indicated that the Government started by providing almost all the components of the pit privies. However, communities started gradually to contribute more and more until at the end the Government was only providing slabs; i.e. the Government ended up by "participating" rather than the other way round. It was asked what approach had the Government used to ascertain if communities needed and accepted pit privies. The response was that the Government started with health education. The programme was advocated, while the Government provided virtually all needed material. Gradually, the percentage of community contribution went up while the Government's went down.

6.2.4. Presentation of Somalia

The following is a summary of Somalia's paper presented by Dr Tirike Awil Abdi:

Community participation is an essential element in the introduction of low technology water supply and sanitation projects at all levels. This approach relies on the community's interest, stimulated by appropriate briefing on the purpose of the scheme and its benefits for the community. This should be duly noted for decision-sharing in planning stages.

Villages (1000-5000 persons), districts and regions elect committees which, within the governmental set-up, have enormous and invaluable authority to identify, propose and participate in community welfare.

The Water Development Agency (WDA), which has the know-how, consults the regional, district, and village committees before implementing any scheme as to their needs and the viability of the scheme. After an agreement is decided on, the committees pledge their commitment and responsibility to maintain and repair the wells. The committees also select people to be trained by WDA to acquire technical skills needed later on.

A Health Education Unit, under the Ministry of Health, is fully engaged in disseminating sanitary procedures and awareness to the community through radio, films, simple understandable posters and regular meetings with communities. To reach the nomads and farmers, a mobile films network is utilized.

These are the approaches which, though still partly deficient, can yet achieve the confidence of the community to be more self-reliant and motivated.

Following the presentation a discussion ensued. It was enquired whether any surveys on patterns of latrine use had been carried out or if investigations had been conducted on people who had not installed latrines as to why they had not. It was indicated that no studies had been carried out, but that one latrine had been built for each family in the interests of privacy and there was no reason why they would not use it. It was noted that in Tanzania, when a latrine is filled, there is lack of knowledge as to how to build a new one. It was also noted that there were some cultural problems. Primary schoolchildren were helping to build latrines. The matter was the responsibility of the whole community.

6.2.5. Presentation of Sudan

The following is a summary of the presentation of Sudan, made by Mr Mohamed El Hassan Salih. It involves a case study on community participation in the Gezira irrigated area which is located in the Central Sudan between the White and the Blue Nile.

The majority of the people in Sudan are participating in the development and running of health services, even in large towns and villages. Community participation has been known for a long time as a traditional phenomenon among Sudanese in agriculture and harvesting, and in building health centres, hospitals, schools, etc.

It is essential to train community participants to suggest and carry out tasks in environmental health services. The trained group, basically formed to facilitate the task of agriculture, is always composed of members of the councils and other notable figures. They are trained in environmental sanitation and health education. The presence of this

component in the village is encouraging for health staff when they come to advise on the different aspects of environmental health, as these village delegates continually observe sanitation conditions and conduct health education for the villagers. They practise this task during their daily activities and especially on Fridays when people congregate in mosques and "zawiyas" (religious places for saying their prayers).

In the Gezira the people are mobilized by the village councils in the area of environmental health to repair and even construct pit latrines as well as to allocate funds for maintenance and upkeep of artesian and surface wells. They provide volunteers to assist in annual residual spraying and village cleanliness by collection of refuse, using facilities available, locally.

In the Expanded Programme on Immunization they mobilize the people and they provide accommodation for schistosomiasis-detecting teams. They also offer help by providing food, drink and accommodation for health staff when they make routine visits to villages.

All decisions are taken by the village councils with the advice of qualified sanitarians and are forwarded to the people concerned.

To conclude, community participation is highly appreciated as 50% of sanitation is voluntary work. This reduces costs and is gratifying to health staff, indicating as it does that their work is accepted and favoured by the community.

In the subsequent discussion, it was pointed out that the Gezira scheme is a large one which uses harvesting workers at certain seasons. These workers are distanced from their homes: What water and sanitation facilities would be available to them? It was indicated that this was a problem. In some cases they use communal latrines and in others they are given permission to use domestic facilities.

6.2.6. Presentation of Syrian Arab Republic

The paper of Syrian Arab Republic was presented by Eng. Haitham El Homsî. A summary follows:

There is close cooperation between the Ministry of Housing and Utilities and the Ministry of Local Administration which is responsible for all municipalities which, in turn, look after one main town or a group of villages. Each main town has a Water Supply Authority responsible for all phases of water projects including operation and maintenance. In small villages, however, the Technical Services Department takes over these tasks, except for money collection since project costs are subsidized by the Government.

Before 1983 most of the projects designed by Technical Services Departments were unsatisfactory; this prompted training of engineers from municipalities, TSDs and local councils and led to vast improvement in project design.

In 1984 and after, the Government found a better way to obtain a better service in water supply and sanitation. It issued Decree No. 14 which established a water supply and sanitation agency in each "mohafaza", responsible for all aspects of planning, design, execution, operation, maintenance and supervision. These establishments are financially and administratively autonomous, and get loans from the Government or from external sources, if possible, covering the first construction cost of water supply and sanitation projects. After they become operational, the establishments collect money from consumers to cover operation and maintenance costs and for loan repayment.

The aim of the Government in the next Five-Year Plan (1986-1990) is to develop water sources to provide full water coverage, to construct sewage treatment plants in five main cities, and to cover the main towns by sewerage networks.

In the discussion it was enquired what the participation of communities really was, and if the Government was doing everything. The response was that projects were subsidized by the Government. Anyone could indicate his needs which, through the party system, would reach the Central Government. However, some work is done at local level by the local communities. It was, furthermore, indicated that the Government is committed to provide full water coverage while sewerage systems are being built and rehabilitated.

6.2.7. Presentation of Tunisia

A summary follows of the paper of Tunisia presented by Mr Mahmoud Aoun.

The Tunisian Government is convinced of the fundamental necessity of water supply and sanitation in the social, health and economic development of the people. It is also aware that municipalities are not capable of investing in sanitation infrastructure because this needs heavy investments and skilled manpower.

For all these reasons, the Tunisian Government established in 1974 a new Organization called The National Office of Sanitation (ONAS) which is responsible for sanitation policies of the Government, and for urban centres of more than 10 000 inhabitants. Other towns will be gradually covered.

For water supply, there is a national agency responsible for Water Distribution; it takes care of all villages with more than 500 inhabitants.

Small villages (less than 500 inhabitants) are supplied with ground-water (Ministry of Agriculture).

When preparing five-year development plans, the first consultation starts from the popular base (CHOOBA) and all national organizations. All these groups collect information relevant to the sector, discuss ideas and send their suggestions to the local Authority (municipality, delegation and district).

Suggestions are then studied at district level by all sector officials concerned; they retain the more important ones and send final proposals to the Ministry of Planning.

After carefully studying these suggestions and considering country possibilities, the final report for selected projects and their costs is prepared, and ONAS is then authorized to execute these projects.

According to the directives of the programme for sanitation, and after preparing project studies, these projects are executed with financial contribution from the public; the community pays either in a lump sum or in instalments.

Maintenance costs of sanitation projects are paid partly by recipients every three months through water supply invoices.

For industrial use, the different rates are based on consumption and on the degree of pollution.

Finally, CHOOBA, through on-going popular meetings, is promoting the use of new sewerage systems in order to derive maximum benefit from the infrastructure.

In the ensuing discussion the speaker indicated that when water charges are not paid by a consumer, his supply is cut off and he must, furthermore, pay a penalty when it is restored. There are, however, some charitable organizations who may assist some of those who are in difficult financial situations. The ONAS limitation on communities of 10 000 inhabitants or more is gradually being lowered. The process of national planning is initiated from top to bottom, but proposals are generated at the bottom and go up to the Government. Local labour forms a community input to these projects.

6.2.8 Presentation of Yemen

Dr Taher Ali Al-Hamdani gave the presentation of Yemen, a case study on the rural water sub-sector. It is summarized hereunder:

Considering the extremely difficult terrain, the isolated population settlements, the almost total scarcity of surface water resources and the lack of qualified technical personnel, the task of sector development is very difficult for the Rural Water Supply Department of Yemen.

A very encouraging factor is the local awareness of the need for water supply systems. Also important is the contribution by the Confederation of Yemeni Development Associations (CYDA) at its community level branches, Local Development Associations (LDAs), which have direct access to all local cooperatives within their areas which are, in turn, linked to village headmen ("sheikhs"). This set-up provides most of the link for development structure at local level and government organizations dealing with development.

The initial activity depends upon the size and number of the communities and the source of supply. In Yemen 90% of water sources are from drilled wells; the balance is from dug wells, springs and a few wadis. When the source is restricted to an individual village or cooperative, then the approach is initiated by the village sheikh or the cooperative's head. His activity involves the following:

- (a) Calling on the Rural Water Supply Department; arranging for a team to visit and carry out survey. In most cases, transport to the village and back, lodging and other assistance for survey and information collection is arranged for by the village sheikh.
- (b) On completion of the survey and design, where pipes and pumps are, in some cases, supplied by the Department, it organizes the laying and installation of pipes at village level.
- (c) If work is given on a contractual basis, the Department generally provides all local assistance to the contractor, including an approach road, land clearance for pipe route, etc.
- (d) On completion, the operation of the scheme is undertaken by the villagers. Except in very major failures, all routine operation and maintenance are carried out by them, including collection of funds for running the facility.

The total lack of transport facilities, the remoteness of most villages and lack of staff in the Department are three major constraints to developing the Sector. However, this can be effectively overcome by community participation which enables the Department to carry out its work much more easily. When the amount of water to be supplied reaches a certain magnitude and the source has to supply several villages, in order to share the common burden of providing the service, the help of the LDA is sought. As sources of supply are normally rare in Yemen, this arrangement becomes, in most situations, unavoidable. In this set-up the LDA, with the assistance of CYDA, plays the part of coordinator between the development authority and the villages where action is required.

The Rural Water Supply Department's representative will coordinate activities such as surveying, design and construction, with the assistance of cooperative heads or the sheikh, at both village and Department level. Normally, on completion the running of the scheme becomes the responsibility of the LDA.

Due to conditions of isolation, each settlements generally forms a close-knit society by itself; in these circumstances the local people can achieve a great deal by means of their personal authority. The use of this authority helps the Department, to a considerable extent, to initiate and complete water supply projects.

The above type of community participation is found mainly in direct projects handled by the Rural Water Supply Department. The cost of community contribution is indirect and normally goes unestimated. There are also cases where private wells drilled locally are donated for projects.

Under the Rural Water Supply Department, the section that deals with bilateral projects includes community participation as part of the contract itself. There are two agencies which adopt this system through the LDA as the coordinator and responsible party. USAID, through TransCentury, and UNICEF which provides water supply under PHC projects, both precisely identify and incorporate the financial commitment of the community input. This mainly comprises supply of local material and unskilled labour required for construction. In most cases this forms approximately 20-30% of the project cost.

In general, community participation in Yemen is reasonably good. At all levels of undertaking keen interest is shown by the community which follows up on the various stages of the project, with personal interest, especially with CYDA trying to provide trained and qualified staff, Also, the active interest taken by this organization in development work has helped the Department to carry out its projects with reduced problems at local level.

In the subsequent discussion it was mentioned that the role of women in Yemen is minimal although decisions made by men on water supply development benefit women, their children and families most.

6.3. Bilateral and International Presentations

6.3.1 Presentation of the International Development Research Centre

Mr James Chauvin presented the paper of the International Development Research Centre (IRDC), a summary of which appears hereunder.

Much lip service is paid to the need to integrate the active participation of communities in water supply and sanitation projects. To date, research to support claims that community participation will increase the potential for success of projects and that it is an effective and efficient strategy has been limited. More research is required if planners and policy-makers are to be convinced of the need to integrate communities into the planning and management of water supply and sanitation systems.

The International Development Research Centre (IDRC) of Canada seeks to promote and assist applied research undertaken by researchers in developing countries. The Water Supply and Sanitation sector, part of IDRC's Health Sciences Division, seeks to promote research on strategies which will provide communities with practical solutions to improve their health through improved water supply and sanitation technologies, improved environmental conditions, and the promotion of correct attitudes and behaviour about personal hygiene. The paper reviewed the mandate and activities of the IDRC, its Health Sciences Division and the Water Supply and Sanitation sector. It also briefly cited the experiences of four IDRC-funded research projects as examples of research on the role and effectiveness of community participation in improving the health status of communities through water supply and sanitation interventions.

The first project involves promotion of improved water supply and sanitation technologies and sanitary behaviours in several villages in Sierra Leone. It is being carried out by a local non-governmental organization. In this project, community participation involves the discussion of proposed project activities between project personnel and community members and volunteer labour to construct the wells and latrines. Although the technology to be used has already been decided upon the non-governmental organization concerned, the community is consulted prior to construction for their views about the proposed design. Modifications are then made, based on practical comments by community members.

The second project concerns Egypt, where a research team has identified shortcomings in the management of water supply systems in certain villages. In one of these, the Government has installed piped water with communal water taps. The system suffers from frequent breakdowns; design faults have resulted in run-off water forming pools around the public taps, where mosquitoes and other insects breed. The village women complain that no one repairs the taps. The objective of the project is to identify who is actually responsible for maintaining the system, where and why there are communications breakdowns in getting it repaired, and how the villagers themselves might take on some of these responsibilities. The community participation component of this project relates to discussing the problems of water supply with the villagers and working with them to identify alternative and practical technologies and strategies to improve the management of the water delivery system. As women are the primary collectors of water, young village women will be trained and employed as members of the research team to solicit information from the villagers and to discuss possible solutions. The community will therefore be involved, both in identifying the factors which decrease the effectiveness/efficiency of the actual selection of alternative technologies and in strategies designed to improve the system.

In the third project, in Kenya, researchers are involved in a community-based and-supported project which aims at decreasing the incidence of schistosomiasis in two villages. Not only is the community involved in discussions with the research team about planned project activities but, perhaps more

importantly, community members have been trained in the collection and analysis of stool samples and trained as health educators. By integrating community members into this important work, the research team expects the project to have a positive and significant effect on changing attitudes and behaviours, leading to the elimination of schistosomiasis.

As the last example of how community participation in research projects can increase the potential for success, an IDRC-funded project in Sri Lanka was cited. Here young village women are trained as handpump mechanics. They are taught to assemble, install, maintain and repair locally manufactured handpumps. In this way, the community can call on the services of one of their own villagers to repair the pump if it breaks down. In addition, the community feels that the pump is theirs, as they are responsible for meeting the costs of maintaining the pump and the services of the handpump technician.

In the subsequent discussion, the speaker indicated the IDRC does not carry out surveys; this was the responsibility of the countries. IDRC does not place limits on how much input is required, but a local contribution is expected. The speaker explained the IDRC cycle of project approval as follows. Firstly, it receives a preliminary request from the country; then it assesses and responds to it. A site visit would then be made to assess the capability of local research. IDRC can assist in developing a research protocol which should be detailed. This would then be discussed in the Agency which would prepare its own documentation and submit it to the Board of Governors (which meets four times a year). If information is lacking, IDRC would go back to the country. Agreements must be concluded with the Government for legal reasons in order to finance research in the country. It may take between three and eighteen months until final approval is obtained.

6.3.2. Presentation of UNICEF

Mr Pandian presented the paper on behalf of UNICEF. It is summarized hereunder:

For the successful implementation of water and sanitation projects in rural areas UNICEF stresses more and more the importance of active community participation. Apart from the transfer of knowledge on low-cost technologies to the local people on water and sanitation, UNICEF is also making efforts so that communities can play a certain limited role easily affordable by them but, nevertheless, highly efficient. UNICEF calls this "Social Mobilization". The role of information, education and communication has served as a key to the success of UNICEF's activities in this field, since involvement of communities has not only resulted in savings by way of local labour, material and money, but helped improve practices and habits.

A development agency such as UNICEF is not only looking into engineering aspects of projects but also into the socio-economic aspects of water and sanitation projects by greatly involving women, as they are going to be the primary users of these facilities.

Regarding women's involvement in protecting the well-being of the child, linked with the socio-economic condition of the mother, by giving women the knowledge and techniques needed, the statement "From Policy to Programme Action" made by UNICEF Executive Director Dr James Grant to the Women's Conference held in Nairobi in July 1985 was quoted as an example.

Further, UNICEF spends 30% of its budget on water and sanitation activities and has taken steps to integrate the programme suitably to meet the needs of the communities as water is considered one of the major entry points to self-sustained improvements in the community. UNICEF looked forward to the fruitful results of the meeting.

In the subsequent short discussion, the speaker outlined UNICEF's approach with regard to rural populations whom they want to do simple tasks and not to be involved in expensive and complicated activities which they cannot afford.

6.3.3. Presentation of Gesellschaft für Technische Zusammenarbeit

A summary of the presentation of Gesellschaft für Technische Zusammenarbeit (GTZ) made by Mr P. Ramachers follows:

GTZ is a Government-owned agency responsible for all activities in the field of technical cooperation on the basis of a general agreement with the Government of the Federal Republic of Germany.

The foremost tasks of the GTZ in its mandate from this Government are:

- Specialist planning, implementation, control and monitoring of technical cooperation projects and programmes with partners in developing countries.
- Providing advice to other similar bodies engaged in development schemes (e.g. organizations, private or otherwise in the Federal Republic of Germany or abroad).
- Recruiting, selecting, preparing and assigning expert personnel and attending to their professional and personal affairs during their period of assignment.
- Planning technical details of material and equipment for projects, as well as purchasing this equipment and despatching it to developing countries.

GTZ implements these projects partly through its own field staff and partly through subcontracting firms of consultants. GTZ is working in more than 100 countries in Africa, Asia and Latin America in the following sectors: agriculture and forestry, vocational training, health, water supply, sewerage, sanitation, waste collection and refuse disposal, mass media, post and communication, transport and urban development, economic development and social services, etc.

Project ideas and project requests should be generated and prepared by the government of the developing country. The Ministry of Foreign Affairs files a request with the local Embassy of the Federal Republic of Germany. The request, bearing the Embassy's comments, is then passed on to the German Foreign Office (AA) in Bonn. The German Foreign Office appraises the application from the foreign policy aspect and passes it on to the Federal Ministry for Economic Cooperation (BMZ). This Ministry assesses the project in the light of development policy. It then commissions the GTZ to investigate whether and how the project could be implemented.

In the subsequent discussion the speaker indicated that GTZ is involved more and more in funding research and technical assistance.

6.3.4. First Presentation of the International Reference Centre

Mrs Christine Van Wijk, on behalf of the International Reference Centre (IRC), presented a case study on action research in United Republic of Tanzania. A summary of her presentation follows:

The project for the development of a community participation component in the Tanzanian rural water supply programme started in 1981. It was carried out by the Division of Planning and Research in the Prime Minister's Office; IRC was involved in an advisory capacity.

The form of research chosen was action (or operational) research. The two main research questions were: "Is there a need to improve existing community participation procedures in water supply and sanitation?" And: "If so, what form should community participation take?".

In the first phase of the project, a field study was carried out by Tanzanian field staff in 60 villages. Twenty villages had a completed water supply project (piped system or handpumps). In 20 others, such new systems were under construction. In the remaining villages, handpump wells or piped systems could not be constructed for technical or economic reasons.

Community participation in water supply projects in Tanzania consisted of a community request and voluntary labour in construction. Operation and maintenance are the responsibility of the Water Department. Water from public waterpoints is free. House connection owners pay water rates. Health education is through radio, MCH clinics and periodic campaigns.

The field study revealed problems in maintenance, use and hygiene. Forty-nine percent of the water points were out of order at the time of the survey. Repairs were frequently delayed because of lack of trained manpower, transport and materials. Also, not all households in the communities with functioning systems were actually using safe water for drinking. Many risks of transmission of water- and sanitation-related diseases continued to exist, e.g. in drawing of drinking water and storage in the home, sanitation in homes and public institutes, wastewater disposal and personal hygiene practices. Special needs of women (e.g. for washing facilities) and other interest groups (e.g. cattle owners) were not always taken into account. This resulted in continuing health risks (schistosomiasis) and in damage of water supplies and conflicts over their use.

It was felt that community participation could help in avoiding these problems. Pilot procedures to enhance existing participation were therefore developed and field-tested in the 60 villages. Findings from this field work includes the following:

- (1) Villagers have valuable local knowledge, both environmental and social, which assists technical staff in selecting reliable and culturally acceptable water sources, suitable candidates for training, etc.
- (2) Involving an elected water sub-committee in local decision-making has resulted in a better distribution of water points in the communities concerned. Where necessary, sharing of waterpoints has been achieved. However, this was only possible when the waterpoint was not too far from the community sections concerned.
- (3) Performance of government-employed operators improved after they were made responsible also the village committees.
- (4) Willingness of the communities to participate in local maintenance including financing, is high. Some villages have carried out repairs with local resources. Training of community-selected maintenance workers is under way. Major issues to be solved are procurement, distribution, and selling of spare parts to project communities.
- (5) Participation of the committees in planning and implementation of local health education programmes has stimulated local improvements in sanitation as well as other improvements (safe water storage in the home, better school hygiene, improved drainage of wastewater, etc.).

(6) Villages without projects have improved water supply conditions with local means (protection of open wells, communal water transport etc.).

(7) Participation of women as traditional managers of domestic water and family health matters has been achieved in 75% of the communities by discussing the importance of their involvement at village assemblies. Women also participate actively in small group discussions on improvement of hygiene conditions in their homes and communities.

Conclusions and Follow-up: The study showed that for a better likelihood of health impacts of water supply projects the supplies should be adapted as much as possible to the behaviour and needs of the communities to be served, especially the village women. Additional participatory health education can further reduce remaining risks of transmission of water- and sanitation-related diseases. To obtain maximum benefits these local programmes should not only involve leaders and women but also husbands.

The results of the whole project were discussed at an inter-ministerial meeting of the Prime Minister's Office, the Ministry of Water and Energy and the Ministry of Health in December 1983. The meeting agreed on a series of recommendations on specific and national guidelines for community participation in planning, implementation, rural maintenance and health education. These are currently under review by the Government United Republic of Tanzania.

Meanwhile a training programme in community participation skills has been developed for field staff in the departments of water, health and community development. A pilot course in two regions is scheduled to start in January 1986.

In the discussion, the speaker indicated that the language of the training programme was Swahili. Many problems were experienced, but it was too early to assess the results. With development of community participation in the field, the trainers themselves were learning. It is a continuous process. Feedback on training was obtained which helped the preparation of the second course. A comment from one participant was that women's participation seemed convincing from the Tanzania experience, but this should be controlled.

6.3.5. Second Presentation of the International Reference Centre

Mr Jan Teun Visscher of the IRC discussed research needs in community education and participation in drinking water supply and sanitation. A summary of the paper follows.

Very few studies have been carried out on the process of community participation in water supply and sanitation projects. What is known has been largely extrapolated from studies in related areas, such as socio-economic and health impacts, socio-cultural aspects and health education. Nevertheless, internationally, consensus has been growing on the need for community participation in these projects. It is felt

that, by devolving decision-making to the community, higher coverage and better use of facilities will be achieved. So far, however, this has not been the daily practice of implementing agencies. A review of research findings has highlighted the existing gap, thus raising the question of how such findings can eventually influence practice. According to the way in which research influences decision-making, two main approaches can be distinguished: research aiming to have a direct influence on policy-making and research aiming to increase overall understanding, thus having an indirect influence on policy-making. Selection of the most appropriate persons to carry out the research needs to be given careful consideration. Often, research carried out as a joint endeavour of the agency concerned and external researchers can influence policy most.

In five broad areas topics have been identified as having priority for research. One topic in each area has been developed. These five main topics are: research on approaches to community participation; health education; operation and maintenance; financial issues; and impact of water supply and sanitation programmes.

Participants were invited to identify the most urgent topics for research and to indicate and work on additional topics of relevance to their particular situation.

In response to a question in the discussion the speaker indicated that, where national capabilities for developing research are not available, IRC could offer assistance.

7. WORKING GROUPS

Participants discussed in plenary general research areas which were later elaborated on in more detail in the working groups. Participants were split into two working groups, each assigned to discuss certain topics.

The topics to be discussed by Group I were:

- a) Research on community participation in operation and maintenance
 - Water supply systems
 - Sanitation systems
 - Cost recovery in rural areas
- b) Actual use of water supply and sanitation systems
 - Water supply systems
 - In particular hand pumps
 - Sanitation systems
 - Surveillance

The topics to be discussed by Group II were:

- a) Health education; and
- b) Communicable diseases.

For composition of the working groups and further details of the topics discussed, see Annex 3.

The reports of the working groups were discussed in plenary, finalized and approved. Participants also discussed general recommendations proposed in country reports and in the various discussions and found to be of major importance.

The general recommendations and recommended research topics are found in the item 8 below.

8. CONCLUSIONS AND RECOMMENDATIONS

8.1. Conclusions

The Meeting provided an opportunity to review processes for community participation in water supply and sanitation in eight countries of the Region (Democratic Yemen, Iraq, Jordan, Somalia, Sudan, Syrian Arab Republic, Tunisia and Yemen) and in two countries outside the Region (Philippines and United Republic of Tanzania). These models represented situations ranging between minimal involvement of communities, where the central government has undertaken the full responsibility for sector development, to a very active participation of the communities involved. Variations in the degree of community participation could be attributed to a number of influencing factors, including: the political system; degree of centralization; logistical considerations; willingness of local communities to participate in the development of their own services and the degree of this participation; financial considerations at central and local levels; the institutional framework, at central, local and intermediate levels, which influences the effective participation of local communities in sector development; human resources development and training at all levels, with emphasis on the operation and maintenance aspects of community water supply and sanitation facilities; etc.

The participants endorsed among other things the principles of community participation as an important element in improving health through the development of the water supply and sanitation sector.

They also identified several potential research topics in community participation in the areas of operation and maintenance, actual use of facilities, health education and communicable diseases.

8.2. General Recommendations

1. Participants endorsed the principles of community participation as an important element in improving health through the development of the water supply and sanitation sector.
2. Where needed, senior planners, policy- and decision-makers and senior managers should be fully informed so as to realize and be convinced of the need for community participation.
3. The role of research is to solve problems and, as such, should be linked to the development of national plans and policy in the health and water supply and sanitation sector.
4. Development of successful community participation is a two-way process on which project managers and personnel learn; they should be ready to revise project activities in the light of what they learn from the community.
5. Where community participation is absent, health promotion and education activities could be used to increase community involvement where it is needed.
6. Practical information on community participation should be disseminated to field-level people, especially on experiences in other locations or countries.
7. Health education is a necessary supplement to all drinking water supply and sanitation programmes to ensure adequate use of safe water, hygienic practices and general sanitation.
8. Health education should be based on the investigation of the needs, knowledge, attitudes, practices, and resources of the various target groups. Whenever possible, target groups should participate actively in the research for and development of health education programmes at community level.
9. Communities should be involved in maintaining and protecting their water sources from pollution.
10. In view of the strength of the spiritual dimension in the lives of the people of this Region, this should be considered as an important component in the development of health education and community participation.

8.3. Research needs

8.3.1. Group I: Operation and maintenance and actual use

Group I reviewed the countries' situations and practices followed in water supply and sanitation in order to identify fields which may require further studies and research.

8.3.1.1. Situation analysis

Water supply

Situations regarding water supply in urban areas in all the countries are more or less alike. Water supply projects are constructed, operated and maintained by governmental authorities. All that the communities are required to participate in is to pay for house connections and the water tariff and to report any defect that may occur in the service.

In Somalia, some of the large villages have the same system as urban areas, but others are supplied from wells through diesel-pumps operated by government workers. In remote villages the community utilizes ponded rainwater. Nomads have their own wells which they dig, operate and maintain. Sometimes the Government constructs wells for communities which do not have a sufficient supply of water.

In Yemen, the communities construct their own wells, install diesel-pumps, and provide the workers for operating them and for carrying out simple maintenance. They also seek support service for the more complicated maintenance occasionally required.

Sanitation

The sanitation situation in urban areas in Jordan, Iraq, Syrian Arab Republic and Tunisia is to be considered at two levels:

The first level concerns areas served through sewerage systems which collect wastewater and dispose of it to natural resources (either a water body or a valley, etc.) in either of the following situations:

- after being treated (Iraq, Jordan and Tunisia)
- without treatment (Syrian Arab Republic, but some sewage treatment plants will be constructed during 1986).

The people are required to pay for the construction of sewers (in a form of taxation), for house connections, and through tariffs. (This does not apply to Syrian Arab Republic).

The second level concerns areas lacking overall sewerage systems, served by individual sewerage systems, septic tanks and cesspools. When these facilities are filled, they are cleaned out by special tankers belonging to, or licensed by, the municipality. Individuals have to pay for this service.

In Somalia, the city of Mogadishu and two other cities have sewerage systems that collect wastewater and dispose of it without treatment to the sea. Other areas are served by individual systems.

In Yemen, the city of Hodeida has a sewerage system which disposes of untreated wastewater to the sea. Taiz also has a system which disposes of wastewater to a valley. Other cities and towns, including Sana'a, the capital, do not yet have sewerage systems and are served by individual systems. The construction of Sana'a's sewerage system has, however, been initiated.

In rural areas, sanitation is more or less the same. Use is made of septic tanks, cesspools and pit latrines, but with different coverage levels. These facilities are mainly built by the community.

All participants felt that much more effort should be exerted in order to achieve better coverage in rural areas.

8.3.1.2. Proposed research areas

Water

Within the context of operation and maintenance of water supply and sanitation, the following four main topics were identified by the participants.

- (a) To what extent the community could participate in operation and maintenance, in particular in countries where water supply coverage is low.
- (b) How the time lag between breakdown and repair can be minimized.
- (c) Effectiveness of the present training of water supply operators selected from the community.
- (d) How community participation can be increased in government-operated schemes.

Other problems that were identified but not further discussed were the provision of water to the nomadic population in drought periods and possible improvement of their existing wells.

Possible methodology: Because of wide variations in the countries represented at the Meeting, it was felt that separate proposals need to be developed for each country, although any country, could benefit from research findings in other countries.

Potential research should not start from scratch. A first approach, therefore, should aim at gathering and reviewing existing information in the country concerned, including preliminary results from ongoing programmes. One approach for this could be the organization of a national meeting on community participation.

The starting point for a set-up of research on identified topics could best be a selection and review of specific situations - that is, a typology according to type of communities, type of water supply, geographical situation etc. Representative communities for each of these typologies should be selected and a detailed study of the existing situation (problems) could then be made by a research team which should include staff members of the implementing agency responsible for water supply and sanitation.

Investigations should include detailed discussions with the communities concerned and, if possible, an assessment of the cost reduction that can be obtained by increased community participation.

At the same time, the job performance of operators could be assessed to obtain an impression of the efficiency of their training.

Possible improvements could then be identified and implementation in pilot areas carried out. A follow-up evaluation is then required to assess the effect of improvements and to suggest suitable approaches for large scale implementation.

Sanitation

In sanitation two main areas were identified: sanitation in urban and in rural areas.

In urban areas, the uncontrolled disposal of sewage is a health risk. Identification of methods to control the disposal of sludge from septic tanks was, therefore, suggested but not further discussed.

In rural areas, latrine coverage needs to be expanded as quickly as possible. Topics identified in this area were the following:

- (a) How the community can best be involved to ensure that a better coverage and use of latrines can be achieved. What type of promotion does this involve? e.g. health education, construction of demonstration latrines. (Health education was not further discussed because it was the topic of Working Group II).

- (b) How can it be ensured that latrines constructed by the community do not pollute wells that are used for drinking purposes? (sometimes these are situated inside the same house).
- (c) How can local materials be used to reduce the construction cost of latrines and other appropriate sanitation systems?

Proposed Methodology The suggested method here is quite similar to the one described earlier. At first, a review of so-called typical situations should be made in the respective countries. This should include functioning and use of latrines and user-satisfaction (that is of men, women and children). Thereafter, possible improvements could be suggested, taking into account ongoing research efforts in, or of relevance to, the respective country. Pilot villages could be selected and the community could be helped to implement suggested improvements.

Post-evaluation would assess the suitability of the improvements and propose possible modifications and follow-up action.

8.3.2. Group II - Health Education

8.3.2.1. Health education for those not reached by TV (Syrian Arab Republic)

In Syrian Arab Republic, two TV health education programmes reach about 80% of the population. One is general health education for the general public. The other is general health education for women, especially regarding child care, food hygiene, etc.

Research questions

- (a) How to reach small groups and communities which are not reached by TV (i.e., 20% of the population).
- (b) How to design health education programmes on water supply which would consider growth and PHC in the context of actual conditions and problems of the people in these communities.
- (c) How to involve people in these communities, including women, in the research for and the development of these health education programmes.

8.3.2.2. Evaluation of health education based on personal contacts between health worker and community (Sudan)

In Sudan, it was found through an assessment that the existing health education through TV, radio and mobile clinics was not totally effective. The main problems were media coverage and lack of understanding of programme contents in rural areas. Therefore, a programme has been set up for person-to-person contact between health workers and villagers. The case to be studied deals with health workers who are assistant sanitarians (of both sexes) employed by the local councils and trained at State schools (one month theory, two months practical training in the field). The effectiveness of the programme will be assessed in late 1986. The results will be fed back into the training programmes.

Research questions

- (a) Through what educational activities and communication methods have the aims of the programme been achieved?
- (b) What indications can be identified that are valid to assess the impact of the programme at community level?

8.3.2.3. Cross-country analysis in comparable cultures of health education approaches (Syrian Arab Republic).

The purpose of the study would be to assess the range of health education activities and their relative merit in order to provide background experience from which future health education activities in water supply and sanitation could be designed.

The study will provide increased insight into existing approaches, including their strengths and weaknesses. It will also stimulate exchange of knowledge and experience between countries in the Region (networking).

8.3.2.4. Inventory of school health education programmes: complementary research

There is a current investigation by WHO in the Region of action-oriented curricula in schools. The study is examining the extent to which PHC, including safe water supply and sanitation, is currently covered by various curricula. Secondly, teaching and learning materials will be catalogued and new materials developed.

Research questions

- (a) To what extent is health education, particularly on water supply and sanitation, part of training, especially of primary school teachers?
- (b) To what extent do teachers know and teach practical concepts and behaviour in safe water supply, sanitation and hygiene?

- (c) To what extent do the water supply and sanitation facilities in schools comply with the teaching?
- (d) To what extent does the teaching of students reach their homes and influence water supply, sanitation, and hygiene behaviour in their families?

9.3.2.5. Comparative study of two health education methods on safe water and sanitation through MCH programmes

The MCH clinic is a gathering point for women and has an essential role in health education. Educational methods may consist of teaching individuals or of group discussions.

Research questions

What is the effectiveness of each method for;

- (a) Identifying what their perceived needs are, their actual practices and the rationale behind them?
- (b) Enhancing the practical understanding of how water- and sanitation-related diseases are transmitted and prevented in their families?
- (c) Eradicating negative practices and introducing or strengthening appropriate conditions and behaviour in safe water supply, hygiene and sanitation?
- (d) Teaching mothers, who do not participate in or do not regularly attend the MCH health education programme, through informal communication networks?

8.3.2.6. Health education on water supply, hygiene and sanitation by trained women volunteers.

In some areas, MCH clinics and/or PHC centres are unavailable or situated at distant locations. This makes it difficult for mothers to participate in health education activities and action programmes on safe water, hygiene and sanitation.

Research questions

- (a) How can informal networks of communication in health and hygiene among women be identified?
- (b) How can these systems be used to promote safe water use and hygienic practices?

8.3.2.7. Improvement of solid waste disposal

The improper disposal of refuse and solid waste is a risk to public health in some densely populated urban neighbourhoods (e.g. Cairo, Sana'a, Damascus etc.). Problems also occur in smaller rural centres without waste collection systems. In Sudan one of the tasks of sanitarians is to survey the community and organize clean-up campaigns by the people to keep the environment clean.

Research questions

- (a) What are the respective effects of community participation and legislation on keeping the environment clean?
- (b) Before the community takes some action it has to be convinced of its necessity. Which methods are more effective in initiating community action: a survey by sanitarians alone or a survey in collaboration with the representatives of the community?

9. CLOSING SESSION

Dr Suleiman Qubain, Chairman of the Meeting, extended, on behalf of H.E. the Minister of Health, his greetings to the participants, and thanked WHO for the effort made to organize this important meeting. Dr Qubain also thanked the participants and the bilateral and international agencies for their effective participation.

Mr Hassan El Shamsy thanked, on behalf of WHO, the Government of Jordan and the Ministry of Health for hosting this meeting and their valuable assistance in its organization and the courtesy and help extended to all participants. Special thanks were extended to the Chairman, Vice-Chairman and Rapporteurs. The active participation of the national participants had made the meeting successful. Bilateral and international participants were also thanked for their valuable contribution.

Mr Mohamed El Hassan Saleh (Sudan) spoke on behalf of the national participants and thanked the Ministry of Health, WHO, and bilateral and international agencies and said the meeting had been useful and concerned a very important subject.

The Chairman then declared the meeting closed.

ANNEX I

LIST OF PARTICIPANTS

DEMOCRATIC YEMEN

* Dr Abdul Gabbar Ali Abdulla
Member of the Polyclinic Committee
Ministry of Health
Aden

** Mr Awad Abdulla Bahrak
Director of Environmental Health
Hadramout Governorate
Ministry of Local Government
Aden

EGYPT

* Eng. Shokri Abu Kamal Sayed Ahmed
Environmental Health Unit
Ministry of Health
Cairo

* Mr Sayed Al Arabi Ahmed Sarhan
Environmental Health Unit
Ministry of Health
Cairo

IRAQ

Mr Khidhir Alias Putres
Sanitary Engineer
D.G. of Preventive and Environmental
Services
Ministry of Health
Baghdad

Mrs Sawsan Noor Ali
Civil Engineer, Chief of Land Use and
Planning Department
Directory of Environmental and
Preventive Services
Ministry of Health
Baghdad

* Did not attend

** Attended from 1 December 1985

JORDAN

Dr Suleiman Qubain
Director PHC
Ministry of Health
Amman

Mr Mohamed Dajani
Chief of Environmental Health
Ministry of Health
Amman

Eng. Abdul Hamid Al-Khateeb
Chemical Engineer, Director of Water
Laboratories and Environmental Control
Water Authority of Jordan
Amman

SOMALIA

Dr Tirike Awil Abdi
Head Environmental Health
Ministry of Health
Mogadishu

Eng. Jama Farah Mohamed
Environmental Health
Ministry of Health
Mogadishu

SUDAN

* Mr Ahmed Abdel Rahman El Shalali
Director Environmental Health Department
Ministry of Health
Khartoum North

Mr Mohamed El Hassan Salih
Principal School Environmental
Sanitary Overseers
Khartoum North

SYRIAN ARAB REPUBLIC

Eng. Ziad El Hajjah
General Director-General Establishment
Water Supply Homs
Homs

Eng. Haitham El-Homsi
Chief of Treatment Plants,
Sanitary Engineering Section
Ministry of Housing and Utilities
Damascus

* Did not attend

YEMEN

Dr Taher Ali Al-Hamdani
Assistant Director of Occupational and
Environmental Health Department
Ministry of Health
Sana'a

Mr Hassan Zabarah
Civil Engineer, Rural Water Supply
Department
Ministry of Public Works
Sana'a

TUNISIA

* Mr Cheniti Slaheddine
Ingénieur Sanitaire
Ministère de la Santé Publique
Tunis

Mr Mahmoud Aoun
Ingénieur Sanitaire
Regional Director of ONAS
Sousse

OTHER UNITED NATIONS, INTERNATIONAL AND BILATERAL AGENCIES

United Nations Children's Fund
(UNICEF), Sana'a

Mr K.R.R. Pandian
Project Manager, Water Supply
and Sanitation
Sana'a

International Reference
Centre (IRC)
The Hague, The Netherlands

Mr Jan Teun Visscher, Project Manager
Ms Christine Van Wijk, IRC Consultant

International Development
Research Centre (IDRC)
Ottawa, Canada

Mr James Chauvin,
Programme Officer

Gesellschaft für Technische
Zusammenarbeit (GTZ)
Eschborn, Federal Republic of
Germany

Mr P. Ramachers,
Project Officer

* Did not attend

WHO SECRETARIAT

Mr Hassan El Shamsy	Regional Adviser, Environmental Health Programme, Secretary of the Meeting	WHO Eastern Mediterranean Regional Office
Dr D.R. Billington	Regional Adviser, Education Development and Support	WHO Eastern Mediterranean Regional Office
*Dr R.C. Ballance	Responsible Officer, Community Water Supply and Sanitation, Environmental Health Division	WHO Headquarters, Geneva

* Attended on 2 December 1985

ANNEX II

PROGRAMME

Saturday, 30 November 1985

- | | |
|---------------|---|
| 08.00 - 09.00 | Registration |
| 09.00 - 09.25 | Opening Session
- Address by H.E. the Minister of Health
- Message of Dr Hussein A. Gezairy Regional Director, WHO Office for the Eastern Mediterranean |
| 09.20 - 10.00 | Recess |
| 10.00 - 10.20 | - Election of Officers
- Adoption of the Agenda
- Introductory Statement: Objectives, order of work, administrative arrangements. |
| 10.20 - 11.10 | Community Participation as An Important Component of the Decade Approach, by Mr Hassan El Shamsy |
| 11.10 - 13.45 | Presentation of Country Reports: Democratic Yemen, Iraq, Jordan, Somalia, Sudan, Syrian Arab Republic, Tunisia, Yemen. |

Sunday, 1 December 1985

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|---------------|--|
| 08.45 - 09.40 | The Participation of Women In Water and Sanitation Projects in the Eastern Mediterranean Region by Dr (Mrs) Habiba Wassef, presented on her behalf by Dr D.R. Billington |
| 09.40 - 10.15 | IDRC Activities with Special Reference to Community Participation, by Mr J. Chauvin |

10.20 - 11.15	Recess
11.15 - 12.00	Review of Training Approaches to Enhance Community Participation, by Dr D.R. Billington
12.00 - 12.15	UNICEF presentation by Mr Pandian
12.15 - 12.25	GTZ presentation by Mr P. Ramachers
12.25 - 13.00	Case study, United Republic of Tanzania, by Mrs Christine Van Wijk
13.05 - 13.45	Research Needs in Community Education and Participation in Drinking Water Supply and Sanitation, by Mr Jan Teun Visscher

Monday, 2 December 1985

08.30 - 13.30	Field trip Visit to a health centre at Ma'adaba
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Tuesday, 3 December 1985

08.45 - 09.10	Showing of film on hygiene, water supply and sanitation and discussion
09.15 - 09.50	Organizing for Community Participation: The Case of the Philippines, by Dr R.C. Balance
09.50 - 10.10	Discussion and identification of general topics for the working groups
10.10 - 11.00	Recess
11.00 - 14.00	Split of participants into two working groups

Wednesday, 4 December 1985

09.00 - 12.30	Conclusions, presentation and discussion of the integrated recommendations in plenary
12.15 - 12.30	Closing Session

ANNEX III

WORKING GROUPS

GROUP I

1. Mr Khedher Putres
2. Mr Mohamad Dajani
3. Mr Jama Mahmoud
4. Eng. Ziad El Hajjah
5. Dr Taher El Hamdani
6. Mr Mahmoud Aoun

Topics to be discussed

- (a) Research on community participation (CP)
in operation and maintenance
 - Water supply systems
 - Sanitation systems
 - Cost recovery in rural areas
- (b) Actual use of water supply and sanitation systems
 - Water supply systems
 - In particular, hand-pumps
 - Sanitation systems
 - Surveillance

GROUP II

1. Mr Abdul Hamid Al Khateeb
2. Miss Sawsan Ali
3. Dr Tirike Abdi
4. Mr Mohamed Saleh
5. Mr Haitham El Homsy
6. Mr Hassan Zabara
7. Mr Awad Bahrak

Topics to be discussed

- (a) Health education
 - Methods, effectiveness, distribution
 - Use of existing trustees - new health workers
- (b) Communicable diseases